

Some Kinds of Medicinal Herbs for the Treatment of Sinusitis

Huynh Tan Hoi

Language Department, FPT University, Ho Chi Minh City, Vietnam.

*Corresponding Author E-mail: hoiht@fe.edu.vn

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Smoke, air pollution, erratic weather are making sinusitis, allergic rhinitis more and more common. The disease affects health as well as the life and activities of the patient by symptoms such as stuffy nose, sneezing, runny nose, stuffy nose, tired body, headache, unexplained fever, etc. Initially, the symptoms of sinusitis, allergic rhinitis are often quite mild, making patients disregard and subjective. Over time, this makes patients tired and unable to concentrate on their work. Long-lasting sinusitis can also cause many serious complications, and as a result, sinusitis treatments with Western medicine, as well as folk remedies, have been used for many years and obtained a number of certain achievements. In fact, the prevention of sinusitis in the community has not been paid much attention in order to find effective interventions for this disease. Finding the factors that affect sinusitis and applying interventions to reduce its incidence in the community is quite necessary. The combination of folk herbs has brought a lot of useful effects in the treatment of sinusitis in Vietnam, this promises the potential of medicinal herbs that we need to know and learn more.

Keywords: Health, Medicinal Herbs, Sinusitis, Western medicine.

Sinusitis not only causes symptoms such as a headache, runny nose or stuffy nose, but also persistent effects on the quality of life of the patient. The basic activities of the patient's daily life from the need for a good night's sleep, the eagerness for their daily work performance or the comfort of the patient at rest will be affected. The patient is easily pessimistic and feels as if his health is getting worse¹.

Sinusitis is an infection that occurs inside the paranasal sinuses. Sinusitis is the term used to refer to the inflammation of the lining inside of the sinuses of the nose. Because the mucosa of the nose and sinuses connect with each other, have the same structure and have the same reaction to the penetration of germs, most sinusitis patients also have rhinitis¹.

In fact, sinusitis is a common disease in Vietnam due to the risk factors of tropical and hot tropical climate, air pollution and the effects of climate change are increasing. Changes in microclimate in the workplace and workplace have a great impact on health and productivity, causing seasonal diseases and weather. The frequency of chronic sinusitis in Europe is estimated at 5% and the number of examinations for acute sinusitis is 2 times higher than chronic sinusitis. In Vietnam, the incidence of sinusitis in the population has not been fully statistics. The number of sinusitis skyrocketed and tended to increase, mainly due to environmental pollution. Every year, there are about 800,000 emergencies which result from sinusitis. Sinusitis is most common between the ages of 20 and 65, and can occur in all classes, all



professions including teachers, workers, police, engineers, health workers and even doctors.

Definition of sinusitis

Sinusitis is a fairly common disease of all ages in Vietnam. Sinusitis is an inflammation of the respiratory mucosa in the paranasal sinuses. This is a condition that causes swelling of the mucous membranes in the sinuses of the sinuses due to certain factors causing sinus congestion. If the disease occurs briefly and then less than 4 weeks away is called acute sinusitis. If the disease is not treated properly, it leads to persistent lasting more than 3 months called chronic sinusitis².

Reasons of sinusitis

There are many causes of sinusitis. The most common causes are viral infections, bacteria that damage hair cells in the lining of sinuses and cause acute sinusitis. In addition, a number of allergenic factors such as cold weather, pollen, dust and smoke environment are also the causes that make susceptible areas prone to sinusitis recurrence if these factors are not removed from the living environment³. There is a rare incidence of sinus anatomy such as nasal septum defect, nasal polyps, nasal enlargement, which leads to poor sinus circulation which causes sinusitis.

Symptoms of sinusitis

The symptoms of sinusitis usually begin with the sneezing and sneezing of the nose as a common flu infection. After two common symptoms are nasal congestion and runny nose, the discharge from the nose may be clear or yellowish green. The symptoms of severe sinusitis are that the person may have a fever, cough, severe facial pain, headache in the forehead, temples, or cheekbones, impaired ability to perceive smell, or not even smell⁴.

Preventions

Avoiding pathogens is a common precaution. Patients should maintain hygiene of nose and throat to avoid rhinitis, pharyngitis leading to sinusitis. In addition, it is necessary to maintain a clean living environment without smoke or polluted dust. They also need to limit exposure to allergens that will reduce sinusitis. People with chronic sinusitis need to keep warm the nose and throat often when it is cold weather to avoid acute attacks. When acute sinusitis is not treated thoroughly, it becomes chronic sinusitis, repeating many times. Because allergy factors exist in the

living environment of the patient, sinusitis is also difficult to control.

Mostly, in cases of acute sinusitis, anti-inflammatory antibiotics, antiallergic drugs, anti-secretory vasoconstrictive drugs must be used reasonably under the guidance of specialists in otorhinolaryngology, otherwise this will lead to antibiotic resistance or chronic sinusitis. In cases where patients have to wash sinuses, inject medicine to treat them, they need to go to reputable medical establishments to avoid unnecessary complications. In addition, patients must adhere to the principles of treatment as well as prevention³.

Advances in sinusitis diagnosis today

Recent scientific advances such as endoscope application in sinusitis diagnosis and treatment have helped make sinusitis diagnosis and treatment to make significant progress. Thanks to the endoscope, doctors can clearly see the images of the structures inside the nasal cavity, thereby assessing the sinus drainage as well as the changes caused by the disease. The introduction of CT scan of the nasal cavity is the great technology since this technique provides an accurate picture of every detail of the structure and pathological signs inside the sinuses. Today, classic X-ray films have been gradually replaced by sinus CT scans.

Treatment of sinusitis

Today, patients can easily choose one of the treatments prescribed by doctors, can easily buy personal hygiene kits at pharmacies, can also buy products nebulizers in medical equipment stores to use spraying drugs (such as antibiotics, antifungal, etc.) with high concentrations into the sinuses to get the best treatment effect¹.

For patients who do not respond to medical treatments such as sinus cleansing and medication, surgery may be required. Depending on the extent of sinusitis, only a limited endoscopic sinus surgery may be needed to clean the middle nasal area; or other sinuses. With endoscopic sinus surgery, the surgeons can access the facial sinuses and can handle the lesions very precisely through the nose endoscope, while preserving the surrounding normal structures. , minimizing complications such as damage to eyes or brain tissue leading to blindness or stroke. Patients after endoscopic sinus surgery just need to stay another day after surgery⁴.

The importance of consciousness of the patient

For each case, the treating doctor will weigh carefully between a number of factors (such as history, symptoms, age, comorbidities, occupation and lifestyle of the patient, etc.). Sinusitis greatly affects the quality of life of the patient. Therefore the patient himself can play an active role in his own treatment. The treating physician is first of all a close consultant, who will thoroughly explain every aspect of the disease and communicate frankly with the patient all possibilities that can occur for them to comfortably accept².

Effectiveness of *ageratum conyzoides*

Ageratum conyzoides has unpleasant smell. This is a herbaceous plant, belonging to the *Chrysanthemum* family. This plant can be found in some parts of the world and Southeast Asian countries. This type of grass grows wildly in rural pastures of Vietnam⁵. This flower can be found in Central America and it often grows wild or is used as ornamental. In Vietnam, this plant is often grown as an ornamental in ecological zones, schools and offices. These plants are also potted or hung on the balcony of apartments. The main ingredient for the pharmacological effects of iridescent is essential oil (0.7% to 2%) found in leaves, flowers and the whole trunk (Figure 1).

According to Oriental medicine, *ageratum conyzoides* has a slightly bitter taste but it has the effect of detoxifying, eliminates swelling, stops bleeding, is often used to treat respiratory infections, pharyngitis, gastritis, abdominal pain, kidney stones and bladder stones. It is also used to support the treatment of cervical cancer and stomach cancer⁶.



Fig. 1. The image of *ageratum conyzoides*

The scientific compositions of *ageratum conyzoides*

Ageratum conyzoides are considered valuable medicinal plants in the treatment of sinusitis with anti-inflammatory, anti-allergic, anti-edematous effects in both acute and chronic exacerbations. Scientific studies have shown that the whole extract of this plant is resistant to the bacteria including *Staphylococcus aureus*, *Bacillus subtilis*, *E.coli* and *Pseudomonas aeruginosa*. In addition to anti-inflammatory effects, *ageratum conyzoides* also work to increase secretion, helps dilute nasal sinuses and flush them out of sinus cavities, helping patients feel decongestant, easier to breathe⁷.

The main ingredient in *ageratum conyzoides* is essential oil accounting for about 2%, in addition to Vietnamese scientists also found in plants containing alkaloids and saponins. The whole plant contains essential oils (0.16% compared to dry medicinal herbs). Leaves and flowers contain 0.2% essential oil with an unpleasant odor, this essential oil contains 5% of phenol (eugenol) with a pleasant odor. The main components of essential oils are γ -cadinen, caryo-phyllen, ageratocromen, demethoxy-ageratocromen and some other ingredients. Leaves contain stigmasterol, quercetin, kaempferol, fumaric acid, and caffeic acid.

Ageratum conyzoides in Vietnam contains 0.7-2% of essential oils, carotenoids, low phytosterols, tannins, saponins and uronic compounds. The rough saponin content in stems and leaves (dried herbs) is 4.7%.

Pharmacological effects of *ageratum conyzoides*

According to studies, extracts of whole plants are resistant to *Staphylococcus*



Fig. 2. The image of *heliotropium indicum*

aureus, *Bacillus subtilis*, *Escherichia coli*, and *Pseudomonas aeruginosa*. In animal studies, *ageratum conyzoides* has also been shown to reduce pain and relax muscles, especially in rheumatism. In Brazil, an aqueous extract of whole *ageratum conyzoides* has been used for arthritis sufferers, with 66% having analgesic and inflammatory effects and 24% improving walking ability after a week of treatment without side effects⁷.

Ageratum conyzoides also has anti-inflammatory, anti-edematous and anti-allergic effects in both acute and chronic exacerbations. And it is considered a valuable medicinal plant in the treatment of sinusitis. There are many ways to use this medicinal plant to treat sinusitis, common in folk often use the following two ways. Patients with sinusitis and chronic runny nose (children aged 3-10 years), women with weather allergies can use 50gr of freshly *ageratum conyzoides*, crush or squeeze in order to drink as juice⁸.

Although only a wild plant, the remedies for sinusitis from *ageratum conyzoides* are extremely effective. Here are some remedies for sinusitis from *ageratum conyzoides* that are commonly applied today. With anti-inflammatory and bacteriostatic properties, this tip works to improve inflammation in sinus tissue, reduce congestion and limit the risk of infection. In addition, this herb helps reduce the symptoms of allergic rhinitis and colds such as runny nose, stuffy nose, cough and sneezing. Here are some remedies for sinusitis from *ageratum conyzoides* that are commonly applied today⁵.

Drinking *ageratum conyzoides* daily

To treat sinusitis, allergic rhinitis, people take about 30-35g fresh plants, washed thoroughly with dilute salt water, drained. Then crushed,



Fig. 3. The image of *xanthium strumarium*

squeezed drinking water. Or we can use 15 - 30g dried *ageratum conyzoides* with 200ml of clean water, drink 2 times before meals everyday until symptoms improve.

Treatment of sinusitis with essence of *ageratum conyzoides*

This is a powerful and direct treatment for sinusitis, supporting the treatment of chronic, long-lasting sinusitis and relapses many times. The method is also quite simple. The patient can take 1 handful of fresh *ageratum conyzoides*, wash thoroughly with dilute salt water, then crush, and filter it to get clean liquid. Before nasal drops, we need to clean the nose clean with physiological saline. After that, we proceed to drip 2-3 times a day. If the patient feels uncomfortable burning, you can use a cotton swab to apply this liquid to the nose for 3 -5 minutes at a time. With this method, the patient may initially feel a lot of pain, but this feeling will help after 2 or 3 times. However, if used this way, the liquid of *ageratum conyzoides* can burn, hurt nasal mucosa.

Treatment of sinusitis by steaming with *ageratum conyzoides*

With a large content of essential oils, steaming with *ageratum conyzoides* is a relatively simple and effective way to treat sinusitis by making the most of the essential oil contained in *ageratum conyzoides*. To steam by *ageratum conyzoides*, we need to prepare a handful of fresh *ageratum conyzoides*, washed, put into a pot to boil. We can also use dry medicinal herbs, but the effect will be lower because the amount of essential oil in the dry plant is only 0.16%. After that, boil water, turn off the heat, cover the towel with a towel, start breathing, take deep breaths for 10 to 15 minutes so that the essential oil can go deep into the sinus cavities, destroy the inflamed foci, reducing congestion sinus nasal mucosa. We should note that during the steaming process, we should not use steam when the temperature is too high and we need to keep a distance from the sauna to avoid burns. To achieve the desired effect, patients should patiently perform this method for at least 2-3 weeks and do not forget to clean our nose before and after the sauna.

Ageratum conyzoides* and *heliotropium indicum

Heliotropium indicum grows wild and has flowers like an elephant's trunk. In Vietnam, the *heliotropium indicum* often grows wildly

along roadsides, in the fields, in dry and open lands. *Heliotropium indicum* is a hard herbaceous plant with many branches, the average height of about 25-40cm. According to Oriental Medicine, *heliotropium indicum* has the effect of eliminating inflammation, poisoning, reducing pain, supporting the effective treatment of sinusitis⁹. The method is very easy. Patients can take a handful of *ageratum conyzoides* and *heliotropium indicum* washed with salt water, drain, then crushed these two ingredients, add a little water and salt, stir well and then extract the juice into the jar to use gradually. Patients need to clean their nose with physiological saline before using it. They need to drip the juice directly into the nose, each time from 2-3 drops for each side of the nose, continuously for 10 days will see the situation of remission quickly (Figure 2).

However, *heliotropium indicum* contains cyanhydric acid, alkaloids. These are highly toxic to the liver, but the toxicity of *heliotropium indicum* does not immediately affect the body¹⁰. It lasts for a long time, so it is difficult to detect. Therefore, the World Health Organization has advised against using *heliotropium indicum* as a drug because it can cause liver toxicity, hemorrhage and even cause cancer to users. The Ministry of Health of Vietnam has also issued a Directive to people and hospitals to be cautious when using *heliotropium indicum*⁹.

Treatment of sinusitis by combining *ageratum conyzoides* and *xanthium strumarium*

Xanthium strumarium grows throughout the tropics, including Vietnam, concentrated mainly in the northern mountains. Scientific studies have also demonstrated that the active ingredient contained in *xanthium strumarium* includes fat, alkaloids, iodine and saponins, which have analgesic, antibacterial and anti-inflammatory properties, supporting the treatment of respiratory diseases, including sinusitis¹¹. If the method of using *ageratum conyzoides* directly causes uncomfortable burning for the patient, using *xanthium strumarium* is a solution to reduce irritation, while supporting effective sinusitis treatment. The composition of the remedy includes *ageratum conyzoides* 30g, honeysuckle 20g, *xanthium strumarium* 12g. The method is as follows. Patients put the ingredients in a pot with 4 cups of water and cook until it condenses into 1 cup and drink 2 -3 times a day. To treat the disease,

patients should persevere 5 to 7 days to see the healing effect (Figure 3).

The effect of sinusitis by using medicinal herbs

All of the ways mentioned above to treat sinusitis from *ageratum conyzoides* have brought certain results because of the anti-inflammatory, anti-edematous, anti-allergic properties of *ageratum conyzoides*. Sinusitis treatment with *ageratum conyzoides* is a folk method, quite safe and economical. However, the effectiveness of treatment depends on the location and the state of response of each person. Moreover, to treat sinusitis, using only *ageratum conyzoides* is not enough, that is, patients sometimes need to combine this plant with other plants in order to take the better effect. Usually, the treatment of *ageratum conyzoides* only works for mild cases of inflammation, helping to reduce the symptoms of the disease⁵.

Ageratum conyzoides also have negative side effects on sinuses. This plant can stimulate the nasal mucosa, increase nasal secretions. Therefore, it is easy for patients to feel the burning of the entire mucosa of the sinuses, the more runny nose, resulting in mucus, pus in the sinuses and nasal passages. When using *xanthium strumarium* to treat illness, patients must abstain from eating pork because of some side effects such as a rash¹¹.

In the process of using *heliotropium indicum* to treat the disease, patients should be careful not to use it for drinking because this plant contains cyanhydride, alkaloids containing the active chemical pyrrolizidine. These are substances that can harm the liver, causing poisoning in certain doses. When using *heliotropium indicum* to treat, if there are some symptoms such as abdominal pain, diarrhea, patients should stop using immediately. Pregnant and breastfeeding women do not use *heliotropium indicum* because it can be life-threatening. In addition to using herbal medicines, patients pay attention to hygiene in daily life and eating. Patients need to add essential nutrients from vegetables and stay away from hot spicy foods as well as stimulating drinks to help the disease recover quickly⁹.

CONCLUSION

Besides using antibiotics, patients with sinusitis can apply herbal remedies to reduce

symptoms, no need to worry about side effects when long-term treatment. Relieve sinusitis at home with folk remedies that are widely used. However, due to the word of mouth, has not been thoroughly studied, so before applying the patient should learn thoroughly to protect your health. Each herb has a unique effect, if used correctly or combined well, it will bring very satisfactory results. This article is limited to a few herbs but does not provide a detailed list of herbs as well as the effects and chemical composition. Hopefully, these restrictions will be further refined to find more interesting and unique ideas.

Limitations of the research

This paper has not been done in depth to get the best results.. Hopefully in the near future, it will be more complete.

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